

DETAILED ACTION

Claim Objections

1. **Claim 4** is objected to because of the following informalities: It recite "wherein the digital enhancement step further comprises suppression of the background image by color suppression, color removal, brightness suppression or relative blurring of the background features". The examiner maintains that each of color suppression, color removal, brightness suppression, and relative blurring of the background features is alternative method for the background suppression. And particularly color suppression and color removal are exclusive to exclusive to each other. Therefore, the examiner interprets the claim as "wherein the digital enhancement step further comprises suppression of the background image by color suppression or color removal or brightness suppression or relative blurring of the background features".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-2, 5, and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Arpa (US 2003/0,085,992), hereafter referenced as Arpa.

Regarding **claim 1**, Arpa discloses **Method and Apparatus for Providing Immersive Surveillance**. Arpa specifically discloses An enhanced video based surveillance method (Fig.2 Surveillance System) for use in the surveillance of a zone, the method comprising the steps of:

- generating and storing an initial background image (produce background 402, fig.4, and could have stored the background image into digital memory which is disclosed in paragraph 36, in order to subtract background from incoming video as follows) of the zone, the background image being composed of constant (static background, paragraph 42) background features,
- using the background image to partition incoming video images of the zone into segments (2D module 418 separates foreground objects from the static background scene, paragraph 42) visually representative of foreground features and background features respectively (foreground objects have been segmented, paragraph 44), and
- digitally enhancing the foreground features (to enhance, trailing shadow may be used, paragraph 46) relative to the background features in the images, thereby to attract visual attention to the foreground features.

Regarding **claim 2**, Arpa discloses everything claimed as applied above (see claim 1). Arpa further discloses wherein the foreground features include objects (moving objects, paragraph 42) or persons imposed in the images on the background image.

Regarding **claim 5**, Arpa discloses everything claimed as applied above (see claim 1). Arpa further discloses wherein the digital enhancement is applied to the foreground features (trailing shadow may be used to show the positions of the moving object, paragraph 47).

Regarding **claim 8**, Arpa discloses everything claimed as applied above (see claim 1). Arpa further discloses wherein the digitally enhancing step is implemented in conjunction with a video motion detection system (Fig.4: Detection of Moving Objects) such that motion-related foreground features only are digitally enhanced (trailing shadow may be used to show the positions of the moving object, paragraph 47).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 3** is rejected under 35 U.S.C. 103(a) as being obvious over Arpa in view of Bottesch (US 5,747,719) (hereafter referenced as Bottesch).

Regarding **claim 3**, Arpa discloses everything claimed as applied above (see claim 1). However, Arpa fails to disclose wherein the digital enhancement step further comprises highlighting, color tinting or color outlining of the foreground features.

In the analogous field of endeavor, Bottesch discloses Armed Terrorist Immobilization (ATI) System. Bottesch specifically discloses wherein the digital

enhancement step further comprises highlighting (color tint, col.9, line 1-33), color tinting (color tint , col.9, line 1-33) or color outlining of the foreground features (person and object, col.9, line 1-33), in order to track the person and object (col.9, line 1-33).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Arpa to provide wherein the digital enhancement step further comprises highlighting, color tinting or color outlining of the foreground features, in order to track the person and object. The Arpa surveillance method, incorporating the Bottesch enhancing target person or object with color tinning, has all of the features of claim 3.

6. **Claim 4** is rejected under 35 U.S.C. 103(a) as being obvious over Arpa in view of Baker (US 2004/0,027,451) (hereafter referenced as Baker), and further in view of Feng (US 2002/0,159,080).

Regarding **claim 4**, Arpa discloses everything claimed as applied above (see claim 1). However, Arpa fails to disclose wherein the digital enhancement step further comprises suppression of the background image by color suppression, color removal, brightness suppression or relative blurring of the background features.

In the analogous field of endeavor, Baker discloses Immersive Imaging System. Baker specifically discloses wherein the digital enhancement step further comprises suppression of the background image (Background suppression, paragraph 182), in order to highlight the movement of the foreground (paragraph 182).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Arpa to provide wherein the digital

enhancement step further comprises suppression of the background image, in order to highlight the movement of the foreground. However, Arpa and Baker still fail to disclose the detail of background suppression (color suppression, color removal, brightness suppression or relative blurring of the background features).

In the analogous field of endeavor, Feng discloses Method and Apparatus for Background Adjustment in Color Reproduction Devices. Feng specifically discloses the suppression of background image by color suppression (suppressing background color, paragraph 21), color removal (background removal in color, paragraph 37).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Arpa and Feng to provide the suppression of background image by color suppression or color removal, in order to highlight the movement of the foreground. The Arpa surveillance method, incorporating the Baker background suppression, further incorporating the Feng background suppression by color suppression or color removal, has all of the features of claim 4.

7. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being obvious over Arpa.

Regarding **claim 6**, Arpa discloses everything claimed as applied above (see claim 1). Arpa fails to disclose wherein the digital enhancement is applied to only a single foreground feature.

However, it was obvious that the digital enhancement is applied to only a single foreground feature, in order to trace the target person or object in the interest.

Therefore, given this motivation, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Arpa to provide wherein the digital enhancement is applied to only a single foreground feature, in order to trace the target person or object in the interest. The Arpa surveillance method, incorporating the enhancement of the target person or object only among foreground objects, , has all of the features of claim 6.

Regarding **claim 7**, Arpa discloses everything claimed as applied above (see claim 1). However, Arpa fails to disclose wherein digital enhancement is applied only to foreground features in specified sub-zones.

However, Arpa further discloses tracking *foreground features (person has entered through a security check, paragraph 49) in specified sub-zones* (secure area, paragraph 49), for the purpose of security alert (paragraph 49).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Arpa to provide wherein digital enhancement (trailing shadow of the moving object, paragraph 46) is applied only to foreground features in specified sub-zones, in order to for the purpose of security alert. The Arpa surveillance method, incorporating digital enhancement applied only to foreground features in the secure area, has all of the features of claim 7.

8. **Claim 9** is rejected under 35 U.S.C. 103(a) as being obvious over Arpa in view of Bradski (US 6,768,509) (hereafter referenced as Bradski)

Regarding **claim 9**, Arpa discloses everything claimed as applied above (see claim 1). In addition, Arpa discloses further comprising the steps of sub-dividing a

three-dimensional zone (three-dimensional model of structure) which is to be monitored into a plurality of three-dimensional sub-zones (multiple views of the cameras), and automatically monitoring motion (Fig.4: Detection of Moving Objects) in at least one sub-zone with multiple digital cameras arranged to view sub-zones (Fig.6 and 7). However, Arpa fails to disclose wherein cameras are stereo calibrated digital cameras.

In the analogous field of endeavor, Bradski discloses Method and Apparatus for Determining Points of Interest on an Image of Camera Calibration Object. Bradski specifically discloses wherein cameras are stereo calibrated digital cameras. (calibrated stereo camera, col. 1, line 18), in order to capture the shape of three dimensional object (col. 1, line 19-20).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Arpa to provide wherein cameras are stereo calibrated digital cameras, in order to capture the shape of three dimensional objects. The Arpa surveillance method, incorporating the Bradski calibrated stereo cameras, has all of the features of claim 9.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday, 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone

Art Unit: 2621

number for the organization where this application or proceeding is assigned is 571-273-8300.

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/HEE-YONG KIM/
Examiner, Art Unit 2621

/Andy S. Rao/
Primary Examiner, Art Unit 2621
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